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Yours sincerely
Lucien M. Underwood

BULLETIN
OF THE
TORREY BOTANICAL CLUB

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A biographical sketch of Lucien Marcus Underwood *

CARLTON CLARENCE CURTIS

(WITH A PORTRAIT)

Lucien M. Underwood was born on October 26, 1853, in a little house still standing in the town of New Woodstock, in central New York. He died at his home in Redding, Connecticut, November 16, 1907.

From early childhood he responded to the healthful surroundings of his home and developed into a lad with a buoyancy of spirit, a whole-heartedness, and with an interest in natural objects that remained the striking characteristics of the man. In the early days of his childhood there appeared those traits and predilections that were to guide him in his life-work. As a child he played with plants, making collections of grass-leaves and other objects. As he learned to read and write, he became interested in collecting papers and documents of all kinds and would prepare lists of celebrities and of events. Later, when his school days brought him in touch with natural science subjects, the house became the repository of rocks and minerals and the laboratory for such physical and chemical experiments as his ingenuity could devise. While at work on the farm as a mere lad, it was his custom to carry in his pocket a box so that no new thing, such as an insect, could escape him. In this connection, it is noteworthy that the stories and reading that are offered to childhood did not appeal to him unless true, nor did he have any liking for his studies until late in his teens when he began such subjects as the Peck-Ganong Physics, Gray's Structural Botany, etc. These subjects completely transformed him and he became

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enthusiastic in all his studies. He would spend the lunch period in the room where the physical apparatus was stored and it was his custom to gather the botanical material for the entire class, carrying it three miles to school.

The surroundings and conditions under which he obtained his education will appear as rather strange to the youth of to-day. At five he began to attend the summer sessions at "the brick schoolhouse" of the district and so continued until he was eleven years of age, at which time he became one of the farm hands, and thenceforth time for educational work could be given him only during the winter terms. At the age of fifteen he entered Cazenovia Seminary, where he studied for two successive winters, and he was also able to pursue his work without interruption during the academic year of 1870-1871, during which session he secured the scholarship prize and the mathematical prize. An interesting record shows that he never missed a chapel or class exercise throughout this entire year, although during this student life at Cazenovia he lived at home, three miles distant, and usually walked to the seminary.

The idea of securing a college education was first suggested to him by Professor L. M. Coon (afterwards Judge Coon of Oswego) in 1870, but circumstances compelled him in the fall of 1871 to take charge of his father's farm, which he worked upon shares, lumbering in winter and performing the ordinary farm work in the summer. Such was his life for nearly two years, during which time he had been so impressed by reading Winchell's *Sketches of Creation*, Lyell's *Principles of Geology*, and other books that he determined to go to college. Accordingly he again attended Cazenovia Seminary during the spring term of 1873, when his unusual facility as a writer and his natural ability as a speaker became manifest for the first time. It should be added that these accomplishments were not entirely natural to young Underwood and were acquired only with very considerable, and to him, painful effort. During this term he represented the Philomathesian Society at the prize declamation contest, delivered his first public oration (this being a chapel exercise at that time), and was also selected as one of the speakers at the commencement exercises, though he was not a member of the graduating class.

The correspondence of this early period shows that the selection of the institution he was to attend was a matter of much concern and that he and his friends discussed the question for a long time, one university being debarred as a "Godless institution." The establishment of Syracuse University near his home, with Alexander Winchell as its first chancellor, decided the matter for him and accordingly in the fall of 1873 he entered this institution, registering in the scientific course.

Here again the surroundings and experiences during his college days make interesting reading. He soon became dissatisfied with the scientific course because deficient in the amount of work required and after seriously considering the advisability of completing the college work in three years, he finally decided to enter the Latin-scientific course although this necessitated the preparation of six books of Virgil, four orations of Cicero, Sallust, Roman History, and Latin Prose. His ability as a speaker again secured for him a place at the Junior Exhibition, an oratorical contest, and also as one of the commencement speakers. His favorite studies were history, mathematics, and geology, the two former by reason of the serious treatment and logical presentation of the subjects and the latter by reason of his natural liking for the biological aspects of the science. This is shown by his devoting ten extra hours per week to this subject during the winter term of his junior or senior years, without credit so far as his college course was concerned. It should be stated that the other sciences offered in the university did not appeal to him strongly, doubtless because they could not be properly presented at that time. This is indicated by the fact that he never enjoyed the use of a microscope during his entire college course save for "one happy afternoon" when he had the rare treat of using a stand and examining a few stock slides that were furnished with microscopes at that time, such as the foot of a fly or the "scales from a butterfly's wing." That he was drawn to the subject in which his life-work finally centered is shown by his starting the compilation of an herbarium in 1875 and, self-instructed, he began a study of the ferns, collecting in Herkimer and other localities specimens which he later characterized as scrappy and of no value. It should be added that he gave a great deal of attention to entomology and perhaps this study appealed to him quite as strongly as any other.

Another feature of his college life not in accord with present day conditions was the absence of the vacation habit. During one summer he attempted canvassing "with negative results" and during two seasons he worked upon farms in the vicinity of Syracuse. In this manner he earned sufficient money in 1876 to enable him to visit New York City and the Centennial Exposition at Philadelphia, thus giving him his first view of the outside world.

At the time of his graduation in 1877 he had made up his mind to enter the teaching profession, but he became so discouraged over his failure to secure a position that he seriously meditated entering other lines of work. He finally secured the principalship of the Morrisville Union School at a salary of \$700 per year, going on trial at \$600 if *not* satisfactory. It would appear as if his experiences at this school would have forever driven any thoughts of teaching from his mind. The school was ungraded and he was obliged to conduct fourteen classes a day. The situation was complicated during the winter session by the entrance of a number of large country boys whose scholastic aim was, according to the light of those days, to break up the school. Nevertheless he succeeded, reduced the course of study to a system, and published the first catalogue and courses of study of the institution. The real nature and strength of the man is well shown at this period. He was evidently undecided and uncertain as to the future, though no records of his views are at hand. But that different fields of activity were appealing to him is evinced by the fact that he not only found time to complete the study of Gray's Anatomy, Dalton's Physiology, and a work on chemistry, practically the first year's work at the Syracuse Medical College, but he also completed a year's graduate work, taking the master's degree at Syracuse University in the spring of 1878. It is also noteworthy that he apparently purchased his first work on ferns (Hooker's Synopsis Filicum) at this time and commenced the accumulation of his valuable fern herbarium.

He was elected teacher of natural science in Cazenovia Seminary for the year 1878-1879 and in July, 1878, published in Case's Botanical Index his first botanical paper. This was a brief note containing a list of 44 ferns (species and varieties) occurring about Syracuse, N. Y., and all but four having been found by him

in that locality. A request was made for exchange of native or foreign specimens. During this year at Cazenovia he was able to complete his graduate work in geology, publishing his thesis in 1879 on "The Geological Formations Crossed by the Syracuse and Chenango Valley Railroad," with a sketch of the hydrography of Onondaga and Madison counties.

The following year he was called to the professorship of natural sciences in Hedding College, Abingdon, Illinois, where in addition to the science work he had a class in English literature; in a letter to a friend he writes that he had a hard time keeping ahead of a junior class, five hours a week, using Deschanel's Physics. His labors closed at this institution in the spring with his taking charge for four weeks of the president's class in Butler's Analogy! It was during this busy period that he conceived the idea and prepared the manuscript for a manual of the ferns of North America.

In 1880 he became professor of geology and botany at the Illinois Wesleyan University, at Bloomington, Illinois, where he remained three years. This was a period of unusual activity, as well as one of great diversity of interests. He experienced, so it seemed to him then, the greatest ambition of his life — the publication of his manuscript on the ferns. This work appeared in 1881 as a small octavo volume of 116 pages, containing a description of 147 species, under the title of "Our Native Ferns and How to Study Them." The edition was limited to 400 copies and was sold out within the year. A second edition ("Our Native Ferns and Their Allies") was published the following year, the larger portion of it being subsequently destroyed by fire, and the third edition was entrusted in 1888 to Henry Holt and Company, who issued the sixth revised edition in 1900.

It was during this period that he became interested in the Hepaticae and began the accumulation of the literature on the group. He also had access to Austin's Hepaticae Boreali-Americanae Exsiccatae at the Illinois State Laboratory of Natural History, one mile distant from the university. He soon conceived the idea of publishing a manual of the group on the plan of his work on ferns and from the sources above mentioned a catalogue of the Hepaticae was compiled and published in 1884 in the Bulletin of the Illinois State Laboratory of Natural History under the

title, "Descriptive Catalogue of the North American Hepaticae North of Mexico." This interest in the hepatics continued until 1899 and resulted in the accumulation of a valuable herbarium and library and in the production of over a score of papers. Notable among his contributions in this line are the "Hepaticae Americanae," a series of exsiccatae, issued in part jointly with O. F. Cook, the last decades appearing in 1899 as Nos. XIX-XX. He prepared the text on the Hepaticae for Gray's Manual of Botany, sixth edition, published in 1890, and had also formulated plans for an extended systematic presentation of the North American Hepaticae. Only the first part of this work was ever completed, appearing in June, 1893, as one of the Memoirs of the Torrey Botanical Club (Vol. 4, No. 1), under the title, "Index Hepaticarum, Part I, Bibliography."

He was often joined in his collecting trips about Bloomington by Professor Forbes and his associates at the State Laboratory and from this source arose his renewed interest in the arthropods; especially was he attracted to the study of the spiders and crustaceans. The extent of this interest is shown by the fact that at the time when he left zoölogical work in 1890 he had accumulated entomological literature that was quite extensive and had published several preliminary papers, mostly bibliographical, on the Arachnida, Myriapoda, and Crustacea.

The marked ability of Professor Underwood to enlist the interests and secure the coöperation of others is strikingly illustrated during his stay at Bloomington. His field work had taken him to various sections of the state and brought him in contact with men interested in scientific work. Mention might be made of Burrill, Seymour, Forbes, Webster, and others. Largely through these associations the organization of the Indiana Academy of Sciences was effected in 1885. He took an active part in the early history of the society, being one of the promoters of the organization and one of the first directors of the biological survey of the state.

In 1883 he was called to Syracuse University as instructor in geology, zoölogy, and botany, and three years later was made professor. During the seven years of his service at Syracuse we find his labor and interest no less diversified than at Bloomington.

In addition to the subjects mentioned above, he taught analytical chemistry, mathematics for three years, and during the last year of his service, human physiology. He always had a great liking for this subject and frequently referred to this freshman class as the most interesting, enthusiastic, and enjoyable class of his experience. This appears the more interesting in connection with an extract from a letter in which he states, "I have a class of eighty-seven students in a room that will seat fifty fairly well. Ventilation is a difficulty and the period extends from twelve to one, after some of the class have had continuous work since 7:45 A. M."

During his stay at Syracuse he succeeded in introducing laboratory work in biology as a required subject, although this was limited to a two-hour course in the spring term of the second year — such was the opposition to innovations of this nature. Owing to limited facilities for work, it was necessary to divide this class into sections, which often necessitated the repetition of the work on four successive afternoons. This period marks the turning point in his career. Gradually he abandoned the study of zoölogy and discontinued the accumulation of works upon the Arthropoda, on which group, at that time, he had an extensive working library. Henceforth he gave his attention to cryptogamic botany, continuing his work on the hepatics and becoming interested in the mosses and especially in the fungi.

His herbaria of the lower plants increased rapidly, owing to his extensive collecting and especially through exchanges which were made possible by reason of his numerous visits to centers of botanical interest. Thus in 1884 he visited Asa Gray at Cambridge, and he often enthusiastically referred to the assistance received and the friendships formed at the various meetings of the American Association for the Advancement of Science, notably at the Philadelphia meeting in 1884, where he first met many botanists that he had known by correspondence; and at the Ann Arbor meeting in 1885, where he roomed in a private house with Arthur, Barnes, and Coulter, while they were making the final review of their "Handbook of Plant Dissection." He spent the summer of 1887 in Georgia, Tennessee, and Virginia, in the service of the Smithsonian Institution, and during the following summer he was occupied in collecting, largely in southern California.

The results of the labor of these years appears in several papers upon the Hepaticae, ferns, and fern allies, while his growing interest in the fungi is indicated by the appearance in 1889 (under joint authorship with O. F. Cook) of "A Century of Illustrative Fungi" and his "Generic Synopses of the Basidiomycetes and Myxomycetes." Both of these works were designed to enable the beginner to become somewhat familiar with the fungi, the first work being a collection of one hundred of our more common species put up in book form.

Securing a year's leave of absence in 1890, he accepted a Morgan fellowship at Harvard University for the purpose of studying the Sullivant and Taylor collections of hepatics and he also had in mind a revision of the Polyporaceae, in which group he had been working for several years. This work was interrupted early in 1891 by his undertaking for the Department of Agriculture a study of the extent and distribution of the orange disease in Florida. This investigation enabled him to make large collections in many sections of Florida and he also made an excursion into Cuba, in the hope of securing extensive collections of ferns. Returning north in April, he collected at several stations in Georgia and resumed his work at the Gray Herbarium.

While at Cambridge he accepted a professorship of botany at De Pauw University, Greencastle, Indiana. This was the first time in his career that he had the opportunity to direct his attention to botany alone, and it is noteworthy that he accepted this position at a lower salary than he was receiving and also at the same time declined a more remunerative position in another institution in order to specialize more closely. There now followed a period of work under the most congenial surroundings and during these four years he published numerous papers on the lower groups of plants. He was a member of the original committee on nomenclature at the Rochester meeting of the American Association in 1892 and was selected as the delegate to carry the report of the American botanists on this question to the International Botanical Congress in Genoa. He was one of the vice-presidents of the Genoa Congress and took part in the discussion which resulted in fixing 1753 as the date of commencing botanical nomenclature. He was greatly influenced by this visit to the Continent, and took

advantage of the opportunity to examine the famous herbaria and become acquainted with the botanical leaders in his line of study, such as Prantl, Strasburger, Ascherson, Magnus, Ward, Chodat, Saccardo, De-Toni, Baillon, and others. The interest thus aroused led him repeatedly to visit England and the Continent, in all making eight trips for the purpose of comparison and study at various botanical centers.

He had for a long time contemplated the preparation of a work on the cryptogamic flora of North America modeled somewhat on the pattern of Rabenhorst's *Kryptogamen-Flora*, but his views broadened as a result of his continental experiences, and early in 1893 he wrote a letter to Professor Britton proposing the formation of a body to organize a general descriptive work on the flora of North America. This resulted in the creation of a standing board of editors of the "Systematic Botany of North America," which was subsequently transferred to Underwood and Britton under the new title, "North American Flora," to be published by the New York Botanical Garden. He served as vice-president of the Botanical Section of the American Association at the New York meeting in 1894.

Owing to financial difficulties at De Pauw, the department of botany was temporarily abolished in 1895, when he accepted a position as professor of biology in the Alabama Polytechnic Institute. He was interested chiefly in fungi during this stay at Auburn and made extensive collecting trips in several of the southern states. Several papers were published upon the fungi, dealing chiefly with their economic importance. Owing to the difficulty of approaching the study of these plants, he began the collection of the extensive and scattered literature of the subject with a view to preparing a work that would serve as an introduction to the study of the group. Later, this material was put into form and appeared in 1899 as a volume entitled "Moulds, Mildews, and Mushrooms." During this period he completed the text on the Pteridophyta for Britton and Brown's *Illustrated Flora*.

After one year at Auburn he became professor of botany in Columbia University in July, 1896. Up to this period his life had indeed been a varied one, but it is not to be inferred that this was due to any uncertainty of purpose or lack of perception. Three

times he had accepted less remunerative positions in order to confine his work more closely to the lower forms of plant life and now for the first time he had the opportunity of realizing the ambition of his life. His interest now became more and more centered in the ferns and he enthusiastically devoted all his energies to studying and amassing collections of these plants. This work necessitated extended collecting trips in the United States and in the West Indies as well as repeated visits to the herbaria of Europe for comparison and study of material.

His career at Columbia has been attended by signal honor. He was one of the ten botanists elected at the Madison meeting of the American Association to form the Botanical Society of America, of which organization he served as president in 1899-1900. He became editor of the publications of the Torrey Botanical Club in 1898 and acted in this capacity until the end of 1902. He was associate editor of "North American Flora" from the beginning of his work at Columbia, during which period five parts have appeared. He was a member of the board of Scientific Directors of the New York Botanical Garden and since 1901 was the chairman of this board. In 1906 Syracuse University recognized his long and eminent service by conferring upon him the degree of doctor of laws.

His work at Columbia has been most fruitful and far-reaching in its results. The publication of his manuscript on "Moulds, Mildews, and Mushrooms" in 1899 stimulated study along this line and assisted greatly in establishing mycological clubs in many sections of the country. His numerous papers on the Pteridophyta and the recent revisions of his book upon "Our Native Ferns and Their Allies" have presented a rational system of classification of the group and a conception of its relationships and of the problems to be considered in its study that will serve as a guide in the investigation of these plants for generations to come.

In reviewing this brief account of Professor Underwood's life and his varied activities we are impressed with the traits that actuated and controlled him. He inherited an energy and a keenness of interest, a curiosity and a quickness of perception regarding living things that are the endowment of few. These characteristics led him irresistibly to the study of natural history and explain the

enthusiasm with which he pursued the various lines of his life-work. To him the keenest pleasure and the best recreation was life in the field, whether the exploration led him in quest of new forms of life or to a reëxamination of familar types. He had an intense ambition to accomplish work. To us this was the dominant trait of his character. His, however, was not an ambition to excel or gain recognition, not a desire for reputation or notoriety, but an impulse to add to the sum of human knowledge and a broadening of the understanding. And to this work he brought that rare quality of arousing interest where none existed, so that his labor is not finished but has been handed to others — his students, his friends. His work has been essentially that of a pioneer. He has blazed the trails and prepared the roads that others may follow and continue the work to greater advantage.

In this estimate of the man we must not overlook other traits of his personality. To all he was the light-hearted, genial associate, but to those in need of assistance he was the sympathetic and helpful friend; and to such his energies were given with an unselfishness that remains as the most cherished memory of the man to so many. The simplicity of his nature, the genuineness of his interest, and his desire to share and to help constitute the charm of a personality that drew people to him and made them his friends.

These higher traits of his nature stand out supreme in his home life. In August, 1881, he married Miss Marie A. Spurr and thenceforth the home was the one place around which all other interests centered. The love of wife and daughter, the sympathies and the enjoyments of the home, was the one theme towards which his thoughts ever drifted. Among his treasured papers, and there are so many of these, is one, in his wife's handwriting, pocket-worn almost past the point of legibility. No better insight into the nature of the man can be given than to repeat a few stanzas of this manuscript :

“ Sweet home upon the hillside fair,
Wherever I may roam,
Through southern grove or western wild,
Thou'rt yet my cherished home.
Thy portals wide
For me still hide
The dearest earthly room

- "Above the city's noise and strife
 Oft has my soul found rest,
 As to the weary work-dimmed eye
 Thou gavest visions blest.
 On land or sea
 I turn to thee
 As worn bird to her nest.
- "Thence have I marked the seasons tread
 Their stately solemn round ;
 Thence have I watched the Storm-King's flight
 On angry mission bound.
 In winter drear
 Or summer's cheer
 Thou'rt ever hallowed ground.
- "How have I loved at eve to pause
 And scan the western sky,
 What time the sun with affluence flung
 His crimson banners high.
 A promise fair
 Of days more rare
 When life's last night draws nigh.
- "Above thy gabled roofs
 The heavens bend more low ;
 The ceaseless tides of human life
 Below thee ebb and flow.
 Within thy walls
 Love's gentle calls
 Make Paradise below."

Our friend rests in a place which almost seems to have been designed by nature for him, on a hillside in the little rural cemetery of Umpawaug at Redding, bordered by two fern-banked streams babbling down to the near-by glen of the Saugatuck, through which he so much loved to take his friends.